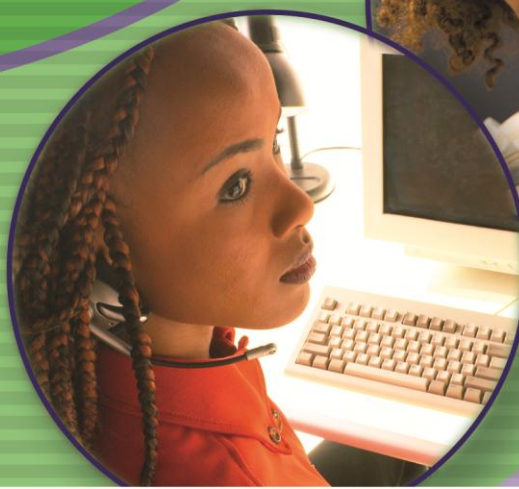# UNESCO/COL Guidelines
for
Open Educational Resources (OER) in Higher Education

**Draft for discussion at the OER Workshop
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Dar-es-Salaam**

UNESCO/COL GUIDELINES FOR OPEN EDUCATIONAL RESOURCES (OER) IN HIGHER EDUCATION

ACKNOWLEDGEMENTS

GLOSSARY OF TERMS

NOTE: Glossary of terms not yet fully developed

Distance education is a set of teaching and learning strategies (or educational methods) that can be used to overcome spatial and/or temporal separation between educators and students. However, it is not a single mode of delivery. It is a collection of methods for the provision of structured learning. It avoids the need for students to discover the curriculum by attending classes frequently and for long periods. Rather, it aims to create a quality learning environment using an appropriate combination of different media, tutorial support, peer group discussion, and practical sessions.

E-learning refers to structured learning opportunities mediated through the use of digital resources (usually combinations of text, audio and visual/video files) and software applications. E-learning may be offered on-line and synchronously (e.g. real-time conference), on-line and asynchronously (e.g. text-based discussion forum) or off-line (e.g. interactive CV/DVD/flash drive). E-learning can be employed in both contact and distance programmes.

Inclusive Design: design that is inclusive of the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference.

Open Educational Resources (OER) are educational resources (including curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, and any other materials that have been designed for use in teaching and learning) that are freely available for use by educators and learners, without an accompanying need to pay royalties or licence fees. OER is not synonymous with online learning or e-learning. Openly licensed content can be produced in any medium: text, video, audio, or computer-based multimedia.

1 INTRODUCTION

1.1 PURPOSE OF THE GUIDELINES

These guidelines aim to provide governments, higher education providers, academics, and quality assurance, accreditation and recognition bodies with a broad framework for integrating open educational resources (OER) into the particular aspects of learning and teaching for which they bear responsibility. In addition, they seek to provide higher education stakeholders with information on how OER can support improved teaching and learning environments across the global higher education landscape.

1.2 RATIONALE FOR THE GUIDELINES

At its core, OER is a simple legal concept: it describes educational resources that are openly available for use by educators and students, without an accompanying need to pay royalties or licence fees. A broad spectrum of frameworks is emerging to govern how OER are licensed for use, some of which simply allow copying and others that make provision for users to adapt the resources that they use. The best known of these are the Creative Commons licences, which provide legal mechanisms to ensure that people can retain acknowledgement for their work while allowing it to be shared, and can choose to restrict commercial activity if they so wish or prevent people from adapting work if appropriate (although this may be legally difficult to enforce).

OER is not synonymous with online learning or e-learning, and, indeed, many open resources being produced currently –while shareable in a digital format – are also printable. Given the bandwidth and connectivity challenges common in some developing countries, it would be expected that a high percentage of resources of relevance to higher education in such countries are shared as printable resources, rather than being designed solely for use in e-learning.

Significant contributions to raising awareness and supporting the use of OER has been made over the past decade by international organizations such as UNESCO and the Commonwealth of Learning (COL), leading higher education institutions, and a growing number of funding bodies. Likewise, the global OER community of contributors and users continues to grow exponentially, as does online access to open content. Despite this, the concept of OER is currently not widely understood by all higher education stakeholders. Consequently, these guidelines have been developed in an effort to provide these stakeholders a high-level overview of key issues emerging from the growing sharing and use of OER, as well as aiming to outline opportunities to tackle current barriers to education through effective use of OER..

THE HIGHER EDUCATION CONTEXT

Recognition that effective higher education systems play a major role in national economic competitiveness in the increasingly knowledge-driven global economy has led to growth in emphasis on the importance of higher education in most countries around the world. As the Organization for Economic Cooperation and Development (OECD) notes, higher education contributes to social and economic development through four major missions:

- *The formation of human capital (primarily through teaching);*
- *The building of knowledge bases (primarily through research and knowledge development);*
- *The dissemination and use of knowledge (primarily through interactions with knowledge users); and*
- *The maintenance of knowledge (inter-generational storage and transmission of knowledge).[1]*

Consequently, higher education is facing immense challenges globally to meet rising demand for enrolments. The percentage of the age cohort enrolled in tertiary education has grown from 19 per cent in 2000 to 26 per cent in 2007 – meaning that there are about 150.6 million tertiary students in the world today.[2] However, this growth is unevenly distributed, and many developing countries, in particular, continue to place strategic emphasis on further rapid growth of higher education enrolments. Typically, though, this growth is not accompanied by equivalent increases in funding, nor is the number of personnel within universities expanding to accommodate the greater teaching load that such growth generates.

Furthermore, as noted by the UNESCO World Conference on Higher Education 2009, the globalization of higher education has brought with it new inequities : the rise of the English language as the mode of scientific discourse and the increasing prevalence of Information and Communication Technologies (ICT) as tools within the education spectrum have 'created a universal means of instantaneous contact and simplified scientific communication' and 'have helped to concentrate ownership of publishers, databases, and other key resources in the hands of the strongest universities and some multinational companies, located almost exclusively in the developed world'[3]. Simultaneously, the past ten years have seen rapid development in ICT, and an accompanying explosion of ICT-related activity as higher education institutions and national systems seek to determine how best to harness ICT to the benefit of students, academics, and countries.

ICT is enabling exponential increases in the transfer of data through increasingly globalized communication systems, and connecting growing numbers of people through those networks. As a consequence of growing numbers of connected people and the proliferation of Web 2.0 technologies, there has been an explosion in collective sharing and generation of knowledge. Collective intelligence and mass participation of amateurs in previously specialized disciplinary areas are pushing the boundaries of scholarship, while dynamic knowledge creation and social computing tools and processes are becoming more widespread and accepted. This opens the opportunity to create and share a greater diversity of learning resources, thereby accommodating a greater diversity of learner needs. Finally, digitization of information in all media, combined with its increasingly widespread access, has introduced significant challenges regarding how to deal with issues of intellectual property. Copyright regimes, and their associated business models, that worked effectively prior to the development of ICT are increasingly under threat, and in some cases rapidly becoming redundant.

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[1] OECD. 2008. Tertiary Education for the Knowledge Society. http://www.oecd.org/dataoecd/20/4/40345176.pdf. p. 4.
[2] http://www.timeshighereducation.co.uk/story.asp?storycode=407334
[3] Trends in Global Higher Education: Tracking an Academic Revolution. A Report Prepared for the UNESCO 2009 World Conference on Higher Education by Philip G. Altbach, Liz Reisberg, Laura E. Rumbley (http://unesdoc.unesco.org/images/0018/001832/183219e.pdf)p.iv

Higher education institutions are increasingly viewing investment in ICT – for management and administration, marketing and teaching and learning purposes – as necessary to establish their competitive advantage. This is because it is attractive to students (particularly in those parts of the world where young people have increasingly ubiquitous access to ICT) and because it is deemed essential by governments, parents, employers, and other key funders of higher education. In many developing countries, though, both a paucity of technology and outdated technology and/or maintenance problems remain challenges, as does access to personal computers for both teaching staff and students. In countries where connectivity and bandwidth are ubiquitous in higher education institutions, this access to the World Wide Web sometimes means that both student and teacher are accessing new knowledge or new resources at the same time. In this environment, the challenge becomes how to distinguish between good quality, relevant resources from the rest.

This rapid ICT development offers both opportunities and challenges for learners who face barriers to traditional means of delivering education. Alternative access technologies that are relied upon to bridge the gap between standard ICT systems and the needs of individuals with diverse learning or access needs cannot keep up with the pace of development. At the same time, though, digital systems are far more adaptable or flexible and can be personalized to a greater variety of learning needs.

A RATIONALE FOR ENGAGING WITH OER

Many proponents of OER advocate that a key benefit of open content is that it is 'free' (i.e. it does not cost anything to download – leaving aside costs of bandwidth, of course). This is literally true: by definition, open content can be shared with others without asking permission and without paying licence fees. However, there are some important cost considerations to be taken into account.

Effective harnessing of OER first requires that institutions invest systematically in programme, course, and materials development/acquisition. Costs will include wages for the time of people in developing curricula and materials, adapting existing OER, dealing with copyright licensing, and so on. It also includes associated costs such as ICT infrastructure (for authoring and content-sharing purposes), bandwidth expenses, and costs of running workshops and meetings when content development teams meet, and so on.

All educational institutions need to be making these investments on an ongoing basis for the improvement of quality of teaching and learning. The most cost-effective way to invest in materials design and development is to incorporate effective adaptation and use of OER, because it eliminates unnecessary duplication of effort by building on what already exists elsewhere, takes advantage of pooled alternative resources to meet legal accessibility obligations, removes costs of copyright negotiation and clearance, and – over time – can engage open communities of practice in ongoing quality improvement and quality assurance.

While it may be a worthy, if somewhat idealistic aspiration to make all educational content available free of charge, in-principle decisions to exclude commercial content from consideration in teaching and learning environments are likely to be inappropriate. Such a stance ignores the reality that there are many high quality educational materials available for purchase and that, for in certain circumstances, their use may be more affordable than attempts to produce that content openly or adapt existing open content. Thus, the most cost-effective way

to develop and procure resources for use in teaching and learning is to explore all available options, rather than excluding some on principle.

A common misperception about the concept of OER is that 'openly licensed' content is now in the public domain and that the author gives up all of his or her rights to this material. In fact, the emergence of open licences has been driven strongly by a desire to protect an author's rights in environments where content (particularly when digitized) can so easily be copied and shared on the Internet without asking permission. Digitization of information in all media, combined with its increasingly widespread access, has introduced significant challenges regarding how to deal with issues of intellectual property such as copyright. The ability for anyone to copy and share content once it has been digitized creates both opportunities and challenges for higher education providers. The main challenges relate to the ease with which digitized content can be copied and shared, with or without the permission of the copyright holder. Thus, open licences seek to ensure that this copying and sharing happens within a structured legal framework that is more flexible than the automatic all-rights reserved status of copyright.

However, given the challenges facing higher education, the more important reason for engagement with the concept of OER is that openly licensed educational materials have tremendous potential to contribute to improving the quality, accessibility, and effectiveness of education, while serving to restore a core function of education: sharing knowledge. The challenges of growing enrolment, combined with the ongoing rollout of ICT infrastructure into universities, indicates that it is becoming increasingly important for educational institutions to support, in a planned and deliberate manner, the development and improvement of curricula, ongoing programme and course design, planning of contact sessions with students, meeting the needs of a greater diversity of learners, development of quality teaching and learning materials, and design of effective assessment – activities all aimed at improving the teaching and learning environment while managing the cost through increased use of resource-based learning. OER manages this investment and the resulting copyright issues in a way that creates significant opportunities for supporting ongoing improvements in the teaching and learning process.

The transformative educational potential of OER revolves around three linked possibilities:
1) Increased availability of high quality, relevant learning materials can contribute to more productive students and teaching staff. Because OER removes restrictions around copying and adapting/contextualizing resources, it can reduce the cost of accessing educational materials. In many systems, royalty payments for text books and other educational materials constitute a significant proportion of the overall cost, while processes of procuring permission to use copyrighted material can also be very time-consuming and expensive.

2) The principle of allowing adaptation of materials provides one mechanism amongst many for constructing roles for students as active participants in educational processes, who learn best by doing and creating, not by passively reading and absorbing. Open licences that encourage activity and creation by students through re-use and adaptation of content can make a significant contribution to creating more effective learning environments. Importantly, the freedom to adapt resources enables higher education providers to serve the learning needs of a greater diversity of learners. This freedom to modify also enables an unprecedented opportunity to adaptation of curriculum to a far greater diversity of learners who would otherwise face barriers to learning due to language, cultural conventions, or disabilities.

3) OER has potential to build capacity by providing institutions and teaching staff access, at relatively low cost, to the means of production of educational materials. This can help to develop their competence in producing such materials and carrying out the necessary instructional design to integrate such materials into high quality programmes of learning. Increasingly, while teaching staff are expected to have the knowledge and skills to teach in a broad spectrum of subjects, they often lack the time to re-visit and modify curriculum and educational materials on a regular and systematic basis. Institutional policies that support the development, selection, adaptation, and sharing of OER as part of dedicated time for developing learning materials will support the growth of institutional capacity to deliver quality higher education programmes appropriate to their ever-evolving student populations.

1.3 SCOPE OF THE GUIDELINES

Given the challenges faced by higher education providers in fulfilling their mandates and the possibilities offered by the concept of OER, UNESCO and COL believe that it is timely to release a set of Guidelines to support governments, higher education institutions/providers, academics, as well as quality assurance/accreditation and recognition bodies, firstly to, navigate their way through the concept of OER; and secondly, to make choices on how best to take advantage of the concept to support accessible, quality teaching and learning,

2 GUIDELINES FOR HIGHER EDUCATION STAKEHOLDERS

2.1 OVERVIEW

In order to support structured consideration of the use and sharing of OER in higher education, this section presents a set of guidelines for different groups of stakeholders, namely governments, higher education institutions/providers, academics, student bodies, and quality assurance/accreditation and recognition bodies.

2.2 GUIDELINES FOR GOVERNMENTS

Governments play a crucial role in setting national policies that help to shape the direction of higher education systems. They have a vested interest in ensuring that public investments in higher education make a meaningful, cost-effective contribution to socio-economic development. As well as playing a key role in policy development, Governments support universities financially through staff remuneration, student stipends, physical infrastructure including laboratory equipment, and the purchase of textbooks (in some cases from a government printer). Government policies on finances also often send signals to the system on key priorities, for example, on the relative emphasis that should be placed on research versus teaching and learning activities, as well as which teaching and learning activities are most important.

Given these central roles, Governments are ideally positioned to encourage or mandate higher education institutions to license educational materials developed using public funding for use by others under an open licence. While there may occasionally be reasons not to encourage this kind of open licensing, sharing educational materials produced using public funding has significant potential to improve the quality and accessibility of educational delivery across national higher education systems by making OER more readily available for use by all higher education providers, not just the recipient of the public funds. Likewise, Governments can use open licensing regimes to increase the leverage of public investments, by facilitating widespread re-use of those investments with minimal additional investment.

In light of the above, there are four key issues for governments to consider in relation to OER:

1) *What policies are in place to ensure that a portion of public spending in higher education is invested in ongoing curriculum design, creation of effective and accessible teaching and learning environments within courses and programmes, for the development of high quality teaching and learning materials?*

   While most university funding systems correctly leave institutions to make decisions about where and how to invest their time and money, the reality is that many universities struggle – either because of limited finances, competing priorities, overloaded academics, or the relatively higher weight given to research output – to invest the necessary resources in ongoing improvement of the educational programmes that they offer to their students.

Thus, a first key consideration for governments, when reflecting on the possible use of OER, would be to examine the possibility of creating policy levers to encourage investment in designing and developing programmes, courses, and educational resources. This might, for example, include setting aside earmarked funding for this purpose or financing collaborative engagements by institutional or inter-institutional teams to develop curricula and materials to address particular identified national priorities. From this perspective, it will be important to scrutinize current tendering processes to verify that, where appropriate, they encourage and facilitate collaboration between institutions rather than encouraging institutions to work in isolation.

It may also be useful for governments to analyse existing policies in higher education in order to determine the extent to which they incentivize academics to spend at least a portion of their time in developing or reviewing curricula, designing effective teaching and learning environments in their programmes and courses, and producing or adapting teaching and learning materials.

2) *What intellectual property regimes should govern public investments in higher education programmes?*

A second key consideration for governments will be to determine whether or not there is a need to establish policy parameters around intellectual property rights (IPR), including copyright, with respect to public investments in teaching and learning in higher education. The answers to this are not simple, and will likely vary from country to country. Some countries already have well-established policies and legislation that governs, for example, IPR in research in the higher education sector, while many universities around the world have developed IPR and copyright policies that are binding on their staff. These policies are becoming increasingly important, particularly given the significant challenges posed to copyright regimes globally by the digitization of content. Thus, it is timely for governments to re-consider what policies should govern investments in educational resources (and perhaps more generally) in higher education, and whether or not there is a case to be made for enabling at least some of the intellectual capital from these public investments to become more widely accessible for the public good under some form of open licence. Ideally, provisions to cover this could be included, as relevant, in policies, tenders, contracts, and other relevant government documents. Amongst other benefits, this could help to eliminate unnecessary duplication of public spending.

3) *How do government officials policies tackle the IPR and copyright challenges posed by digitization of content and the variety of open licences available to help to deal with these challenges?*

As has been noted, rapid digitization of content is posing unprecedented challenges to many well-established systems of intellectual property management, as well as several underlying business models. These changes have already had significant effects on entire industries (for example, music and film) and are starting to affect others (such as educational publishing) in similar ways. Whilst these changes offer both opportunities and challenges, they also carry with them a requirement for all people in decision-making positions to be aware of the changes that are taking place and what appropriate responses might be. Consequently, it is advisable for governments to invest in awareness-raising activities amongst government

officials, institutional decision-makers, academics, and other key stakeholders to explore the emerging educational and economic issues and proactively consider both the possibilities and challenges that they pose.

4) *Are government officials aware of the potential to use OER to meet legal and policy commitments to equal access to education?*

Governments globally are recognizing the far-reaching economic and social impacts of exclusion from education.[4] With a greater diversity of learners in most institutions due to migration and the rising incidence of disabilities, many institutions are struggling with legal or policy obligations to provide equal access to education. Fixed educational resources designed for the typical learner present barriers to many potential students. If OER delivery systems and OER are designed correctly, they have potential to contribute to meeting the diverse needs of previously marginalized learners. Thus, governments should consider OER as a mechanism for providing greater access to education.

Within this context, it is suggested that governments may wish to:

- Review and, where appropriate, adjust existing national and regional policies and funding regimes to ensure that they make specific provision for supporting institutional investments in ongoing curriculum design, creation of effective teaching and learning environments within courses and programmes, and development of accessible, high quality teaching and learning materials. It will also be worth verifying that tendering and procurement processes make provision for collaboration in materials development processes where this can add value, rather than encouraging individuals and institutions to work in isolation. Given the centrality of ICT and connectivity to effective use of OER, such a review would need to include review of ICT strategies and procurement policies in higher education, for both institutions and students.

- Consider the adoption or adaptation, in accordance with national needs, of an appropriate Open Licensing Framework (such as the Creative Commons framework), with clearly defined options for use by all higher education stakeholders, ideally as part of an overarching policy framework on intellectual property rights and copyright in higher education. Such a licensing framework should ideally also cover the copyright status of educational materials produced by government departments and agencies themselves.

- Play an awareness-raising and advocacy role around the use of OER, helping all higher education stakeholders to understand issues surrounding IPR, as well as how these are being challenged and re-shaped by the rapid digitization and online sharing of information and resources. This role could include advocacy work with higher education institutions and other stakeholders around OER to ensure that OER are not viewed as inferior and are used by when appropriate. It could also include development and sharing of case studies of good practice and relevant examples of use to help to give practical expression to the advocacy work.

- Support universities, individually or collectively, to invest resources in the production of high quality educational resources and ongoing improvement and updating of curricula and

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[4] http://www.martinprosperity.org/research-and-publications/publication/releasing-constraints

teaching materials, harnessing and adapting existing relevant openly licensed materials to support this work in order to ensure that it is undertaken in the most cost-effective way possible (without compromising quality). In many instances, this could be done as part of a systematic effort to widen access to, and participation in, higher education.

- Encourage and support the use of OER to adapt learning experiences to a greater diversity of learners, pool and share resource alternatives, and thereby also improve learning outcomes for previously marginalized learners.

- Work with higher education providers to determine the most cost-effective ways in which to facilitate organization, curation, and online sharing of OER between all key stakeholders in higher education. While it is likely that some institutions will prefer to host their own content on their institutional servers, it may be most cost-effective to establish shared national repositories of OER that can be accessed by all higher education providers and connect to global networks – or potentially even better to agree to join global efforts to develop OER repositories and directories rather than replicating these investments unnecessarily. Again, there is no single strategy that will work for every country, but a coordinated approach will likely yield the best results.

2.3 GUIDELINES FOR HIGHER EDUCATION PROVIDERS

Most higher education providers describe their mandate as threefold: research, teaching and learning, and outreach. Often, whilst research and collaborative partnerships might be high on an institution's agenda, teaching and learning may at times receive less institutional focus because it is assumed that this is strictly the domain of qualified faculty staff. However, in most cases, teaching staff are appointed on the basis of their disciplinary and research expertise rather than on the basis of a proven ability to teach effectively and so they are likely to need support in adopting new ways of teaching.

As noted, a core function of a higher education institution is effective teaching and learning, which requires appropriate investment in curriculum and course design and materials development, as well as ongoing evaluation and regular renewal. At the same time, it is recognized that most countries are placing pressure on higher education institutions to increase participation rates. Teaching staff consequently often need to deal with ever-increasing class sizes and a growing diversity of learners. Therefore, institutions need to make better use of the resources they have. Given this reality, the primary role of teaching staff should not necessarily be the delivery of content in the form of lectures: this can be managed more effectively by the development and provision of learning resources. As a further advantage, well-designed learning resources typically require much greater individual engagement by students with information, ideas, and content than is possible in a large-scale contact lecture. Face-to-face time with students can then be better used to support engagement and to nurture discussion, debate, and practical application, or to support student research activities.

In developing curricula and learning resources, teaching staff have always engaged with what is already available – often prescribing existing textbooks, building on previous iterations of a course taught by predecessors or colleagues, and creating reading lists of published articles for example. Even in distance education institutions, which have a long history of materials development, it is arguably a rare occurrence to develop completely new materials with no

reference to what already exists. The increasing availability of OER widens the scope of what is available, but, perhaps more importantly, opens up greater possibility for adapting existing resources for a better fit with local contextual and cultural needs , as well as the accessibility needs of learners, without the requirement to spend time in lengthy copyright negotiation processes or, failing that, to duplicate development of the same core content. This is usually most effectively and efficiently managed if teaching staff work within a team in which disciplinary expertise is combined with expertise in content sourcing, learning design, resource development, materials licensing, and so on. If the new/ revised learning resources that emanate from such a process are then shared back with the wider higher education community as OER, the possibility exists for further engagement and refinement in the form of constructive feedback. The end result should be better curricula and better materials developed more quickly and renewed more often.

It should be clear that employment contracts with the various contributors to the development of new or revised learning resources – from whole programmes down to individual learning objects – should expressly acknowledge the right for the individual contribution to be recognized but also the intention for the final product to be made available under an open licence. Given the marketing potential of learning resources released under the institution's imprint, a policy commitment to clear criteria and robust processes for quality assurance would seem of particular importance.

It is important to stress the hierarchy implied here. Engagement with OER originates from the need to address curriculum needs within the institution; the development and sharing of new OER is a product of meeting that need and not an end in itself.

Within this context, the following issues justify consideration by higher education providers:

1) *To what extent do current policies motivate academics to invest at least a portion of their time in ongoing curriculum design, creation of effective teaching and learning environments within courses and programmes, and development, sourcing and/or adaptation of high quality teaching and learning materials?*

   Some universities already have policies that encourage such investments, either through inclusion of these elements in job descriptions, inclusion of these activities in rewards, incentives, and promotions policies, and/or appointment of people and units dedicated to these tasks.

   While different universities may wish to incentivize these activities in different ways, according to their specific mission and vision, all would benefit from ensuring that their policies provide structural support to investment of time by teaching staff in these activities, as part of a planned process to improve quality of teaching and learning. A policy recognition of and support for the development of curriculum and learning resources in multi-skilled teams should relieve the overload of academic staff whose primary function would be the identification and quality assurance of existing OER, and where necessary development of new, disciplinary content.

   A policy commitment to sourcing, use, adaptation, and creation of appropriate OER, in support of ongoing curriculum and materials review cycles, would help to ensure that teaching and learning is seen as a continuing process of renewal. Ideally, this policy

commitment should be accompanied by a clear framework of professional development and support to teaching staff to help them to develop the competences necessary to perform these functions effectively.

2) *Does the university/higher education provider have a defined IPR and copyright policy in place?*

A good starting point for consideration of OER is to have clear policies in place regarding IPR and copyright, preferably with a preferred default institutional licence and a process to apply other licensing options when the default licence is inappropriate. A clear policy would for example, plainly lay out the respective rights of the institution and its employees and sub-contractors, as well as students (who might become involved in the process directly or indirectly through use of some of their assignment materials as examples) regarding intellectual capital.

3) *Do institutional policies and practices reward creation of materials more highly than adaptation of existing materials? How much is collaboration valued?*

Whilst there is no universal way of dealing with these issues, the reality is that incentive structures often reward individual, rather than collaborative, activity and encourage production of 'new' materials. While there are sometimes good reasons for a faculty member to develop materials from scratch, such processes may often duplicate ongoing work taking place in global knowledge networks that are engaged in facilitating increasingly creative forms of collaboration and sharing of information. The history of development of materials for distance education purposes, for example, illustrates clearly that, all other things being equal, collaboration by teams of people producing materials tends to produce higher quality results than individuals working in isolation.

Consequently, it is opportune for universities to think strategically about the extent to which their policies, practices, and institutional cultures reward individual endeavour over collaboration and create inefficiencies by prizing, in principle, creation of 'new' materials over adaptation and use of existing materials and content. As the amount of content freely accessible online proliferates, such approaches to procuring materials increasingly seem unnecessarily wasteful. Thus, there may be merit in ensuring that incentives structures and quality assurance processes make provision for judicious selection and use of existing content (particularly that which is openly licensed and hence free to procure), as well as development of new content.

4) *What is an appropriate starting point for initiating a sharing culture and encouraging movement towards OER publishing?*

Historically, universities and academics have often been actively encouraged to protect their intellectual capital closely. Their incentives to publish are clear, but sharing teaching practices, approaches, and materials will not necessarily be a common practice. Consequently, inviting colleagues to share materials with each other may be met with resistance and scepticism. Recognizing that this is an historical legacy of how academia has tended to function, it is important to find ways to shift this culture, and to encourage ways of sharing materials that are not threatening to teaching staff. One way that some universities have begun this has been to encourage teaching staff to share their lecture notes and/or

slide shows used in particular courses online. In this way, they are sharing notes they create for their students, in a way that first benefits their current students – as they can access to the materials digitally – and then benefits colleagues in their own, and other institutions, as their notes may be used and adapted for other purposes. Lowering the scale of what constitutes an OER – and not expecting the OER that are as substantive as full textbooks to be available immediately – may be an important step towards shifting the culture of sharing in higher education.

Similarly, institutions may require that all formal assessments for courses are published as OER. This would mean that a repository of tests, problems sets, assignments, essay questions, and examinations would be available under open licences. Like lecture notes, assessments are something that academic staff have to create as part of their job functions. There is little additional work required to publish these under open licence. However the contribution to the institution, as well as to the academic community, could be significant. Release of this would also force teaching staff to invest in ongoing re-design of assessment strategies, thus keeping assessment practices current and helping to reduce plagiarism (because the temptation of teaching staff to re-use old assessment activities would be reduced given that they would be openly accessible).

5) *Do curriculum producers understand how to design or adapt educational resources so that they can be easily modified, adapted, and reconfigured for a variety of delivery mechanisms or learner needs?*

Learners use a large variety of devices and applications to access learning materials, including alternative access systems such as screen readers, screen magnifiers, or alternative keyboards. Educational resources can be designed to be easily reconfigured to work with these access systems, whether they be mobile devices or assistive technologies intended for learners with disabilities. Institutionally adopted authoring tools and templates can support this inclusive design of OER so that creating adaptable resources becomes a naturally integrated part of creating curriculum.

6) *Do staff members understand copyright issues and the different ways in which they can harness openly licensed resources?*

By virtue of their core functions, universities are positioned to be at the forefront of knowledge societies. In some universities, though, academics have limited knowledge of or exposure to issues around copyright and the proliferation of online content, much of which is openly licensed. These issues are growing in importance, as they are central to the rapid growth and development of new, increasingly global knowledge networks, driven by the growing functionality and reach of the Internet.

These emerging knowledge networks – effectively niche groups of specialized areas of interest sharing and developing knowledge across national boundaries – are complex and diverse, but have become an essential feature of the knowledge economy and of many academic endeavours. This means that teaching staff increasingly need to understand the complex issues surrounding these knowledge networks and how they may be changing the ways in which content is both created and shared. Accordingly, it is becoming increasingly important for universities to ensure that they invest in awareness-raising exercises to bring

these issues to the attention of their staff and to explore how the institution and the academics can benefit from them.

7) *Are there compelling reasons why the institution would not want make its teaching and learning materials shareable under a Creative Commons licence?*

Regardless of how universities position themselves in relation to the above points, they all generate large quantities of curriculum content and teaching and learning materials each academic year. Assuming that institutions have copyright policies that vest the copyright of such materials in the institution, their next consideration may be whether they derive better value from retaining all-rights reserved copyright or from releasing some of the rights.

While a small percentage of teaching and learning materials can – and will continue to – generate revenue through direct sales, the reality has always been that the percentage of teaching and learning materials that have commercial re-sale value is minimal; it is also declining further as more and more educational material is made freely accessible on the Internet.

It is becoming increasingly evident that, on the teaching and learning side, educational institutions that succeed are likely to do so predominantly by understanding that their real potential educational value lies not in content itself (which is increasingly available in large volumes online), but in their ability to guide students effectively through educational resources via well-designed teaching and learning pathways, offer effective support to students (whether that be in practical sessions, tutorials, individual counselling sessions, or online), and provide intelligent assessment and critical feedback to students on their performance (ultimately leading to some form of accreditation). Although it may seem counter-intuitive, therefore, as business models are changed by the presence of ICT, the more other institutions make use of their materials, the more this will serve to build institutional reputation and thereby attract new students.

In this changing environment, there is a strong case to be made for considering the marketing value and added exposure that can be derived from making this intellectual capital easily accessible under open licences, rather than seeking to retain all-rights reserved copyright. However, as there will be instances in which institutions and academics will need to protect all-rights reserved copyright, it remains important to create provisions in copyright policies to assert full rights over specific materials where this is considered commercially or strategically important. Having noted this, it is worth adding that a policy which requires staff to justify the assertion of all-rights reserved copyright can help to eliminate the corrupt practice of teaching staff selling their own teaching and learning materials to their students as a separate commercial activity.

Within this context, it is suggested that higher education providers:

- Review and adjust as appropriate existing policies and staff incentives schemes to ensure that they encourage teaching staff to invest time in ongoing curriculum design, creation of effective teaching and learning environments within courses and programmes, and development of high quality teaching and learning materials. Key policies that require consideration in this regard will typically be those policies that govern staff incentives, rewards, and promotion. Also important for consideration is the process of determination of

staff workload, and how this might affect allocation of time to different kinds of tasks. It may also be necessary to explore the extent to which current mission and vision statements place relative emphasis on the importance of each of the core functions of higher education, and how this affects ongoing strategic planning. Such policies may seek to provide for investment in and maintenance of tools for the development, adaptation, use, and storage of educational resources of different kinds, as well as appropriate professional development and support for teaching staff in their use.

- As part of the above process, ensure that policies and procedures encourage judicious selection and adaptation of existing materials and collaboration (both within and beyond the institution) in developing materials.

- Ensure that the institution has in place robust, enforceable IPR, copyright, and privacy policies (addressing possible full-time, part-time and contract staff as well as students any and all of whom might become involved in a team-based curriculum and materials development process). As part of this policy process, consider the relative merits of creating flexible copyright policies that automatically apply open licences to content unless there are compelling reasons to retain all-rights reserved copyright over those materials. Simultaneously, though these policies should make it easy for staff to invoke all-rights reserved copyright where this is justified.

- Invest in ongoing awareness-raising, capacity-building, and networking/sharing activities to develop the full range of competences required to facilitate more effective use of educational resources in higher education programmes.[5] These activities could aim to encourage 'a shared vision for open educational practices within the organization'[6], which would ideally be aligned to the institution's vision and mission.

- Invest in knowledge management systems and strategies to store, curate, and share intellectual capital internally (subject, of course, to the parameters of the institution's IPR and copyright policies), so that academic endeavour builds on a growing base of institutional knowledge. Ideally, to ensure cost-effectiveness, this would be done as part of a coordinated national strategy or in partnership with emerging global OER networks and repositories. This should ideally be accompanied by ongoing investments to ensure that teaching staff have access to the necessary ICT infrastructure and connectivity to access the Internet and develop or adapt educational materials of different kinds.

- Adopt and support the use of content management and authoring tools (web content editing tools, content management systems), templates, and toolkits that facilitate the creation of adaptable, inclusively designed educational resources (also see Appendix Two). It is also important to ensure that learning management systems or other means of delivering OER are compatible with alternative access systems and enable the reconfiguration of resources.

- Ensure that internal quality assurance processes make provision for assessing and reviewing the role and use of educational resources in improving quality of teaching and learning. Here, it will be important to ensure that quality assurance systems and curriculum approval processes in universities assess on their individual merits the use of resources

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[5] A complete list of relevant skills and competences for consideration is included in Appendix One.
[6] OPAL – the Open Educational Quality Initiative , www.oer-quality.org

sourced from multiple locations, as well as how these are integrated into curricula to form meaningfully coherent learning pathways.

- Commission periodic investigations to determine the extent of use of openly licensed educational materials in higher education programmes, how this affects the quality of educational delivery in higher education, and its impact on the cost of developing/procuring high quality teaching and learning materials for undergraduate and postgraduate programmes. Ideally, this might come to be seen as an emerging avenue of academic research in its own right. Where relevant, this might usefully be extended into showcasing examples of good practice, both in marketing publications and in the form of academic research publications.

2.4 GUIDELINES FOR TEACHING STAFF

Teaching staff are ultimately the most important agents in ensuring the quality of the teaching and learning delivered to students in higher education programmes. They generally have significant responsibility for, and remain at the centre of, the teaching and learning experience for students.

In the final analysis, the responsibility for assuring the quality of any content, including OER, used in teaching and learning environments will reside predominantly with the programme/course coordinators and individual academics / teaching staff responsible for delivery of education. As they have always been doing when prescribing textbooks, choosing a video to screen, or using someone else's course plan, they are the ones who retain final responsibility for choosing which materials– open and/or proprietary – to use. Thus, the 'quality of OER' will depend on which resources they choose to use, how they choose to adapt them to make them contextually relevant, and how they integrate them into teaching and learning activities of different kinds.

Consequently, the following issues justify consideration by teaching staff:

1) *What are the potential benefits of integrating use of OER into individual courses and programmes?*

   As has been noted in previous sections, there are clear and specific roles that OER can play in helping to improve the quality of teaching and learning. Teaching staff can harness OER to facilitate more effective teaching and learning in ways that save time and that enable students to take greater control of their own learning – engaging more with core resources in their own time and at their own pace. Freed from being the primary deliverers of content, teaching staff can then use their time more strategically to nurture meaningful engagement and debate and to reflect upon their own curriculum and pedagogic assumptions and practice with a view to critical reflexive practice.

   In addition to making teaching more cost-effective and productive, development and use of OER can provide a springboard for new areas of personal research and can indeed be a form of action research in itself. For example, there is an increasing range of new journals dedicated to the educational aspect of specific disciplines (such as medical education and engineering education). Thus, OER development and use has the potential to enhance research productivity and to make one's teaching genuinely research-led.

Review and use of available OER raises the opportunity for academics to learn more about existing networks of academics working in cognate fields. Becoming part of a discipline-specific teaching network may have the same benefits associated with a community of practice focused on research.

2) *What are the non-educational incentives for integrating use of OER into individual courses and programmes?*

From the perspective of teaching staff, proper incentives for sharing content openly are likely only to flow when institutions change their policies to reward such activity properly. Thus, for most teaching staff, the incentives lie in changing institutional (and possibly government) policies and budgetary frameworks so that they reward collaboration and open sharing of knowledge, rather than either penalizing it (by removing possible streams of income when knowledge is shared openly) or ignoring it (as some universities do by rewarding research publication over other pursuits such as time spent in designing educational programmes, participating in collaborative materials development processes, and making produced materials freely available for others to use).

Beyond this, however, as digitized content can easily be shared between students and institutions, sharing such content under an open licence is the safest way for an author to ensure that, when content is shared, it remains attributed to the original author. Releasing materials under an open licence encourages individuals or institutions to state the source of materials, as they have permission to use them – and they are visibly available online for use by others. Thus, sharing of content as OER may provide legal safeguards to teaching staff as they increasingly share their materials in digital formats. Wider visibility of such materials, with clear acknowledgement of authorship, can also reduce the risk of plagiarism of one's intellectual capital. In addition, open sharing of materials provides teaching staff opportunities to showcase themselves and the work they are doing throughout global networks, thus raising their academic profile.

Digitization of content has changed the rules regarding sharing of content. Academics may wish to consider not why they should share their educational content, but rather, how to stay in control of the process of their educational content being shared. Academics are already aware that the more useful content is to students, the more likely it is to be shared, with or without the author's permission. Open licences, which modify but do not remove copyright, maximize the likelihood of content sharing taking place in a transparent way that protects the moral rights of content authors. It is thus foreseeable that reputation will grow by making content available as a way of publicizing competence in providing support, assessment, and accreditation.

Finally, it is increasingly the case that individual teaching staff who seek to ring-fence their educational content and research by applying all-rights reserved copyright licences and not sharing it with others will likely place limits on their own development. They will increasingly be excluded from opportunities to improve their teaching practice and domain-specific knowledge by sharing and collaborating with growing networks of educators around the world. Those who share materials openly already have significant opportunities to build their individual reputations through these online vehicles (although, of course, the

extent to which they manage this will remain dependent on the quality of what they are sharing).

Within this context, it is suggested that teaching staff in higher education institutions:

- Build an understanding of the key issues around IPR, copyright, and privacy, how these have been affected by the rapid digitization and online sharing of content, and what the likely effects of this might be on academia and career development in higher education.

- Explore existing OER relevant to their teaching needs by visiting suitable repositories and, after clarifying copyright issues, adopt or adapt pertinent OER as necessary to meet particular curriculum needs. Investment in the creation of new high quality content would then be reserved for those parts of the curriculum where suitable learning resources are currently not available for adoption or adaption. Sharing new and/or adapted resources to address curriculum gaps with the wider OER community then constitutes a significant contribution to world knowledge. In addition to using existing OER to support student learning, existing OER can be a very useful reference point for reflecting on one's own curriculum and pedagogy.

- Consider 'starting small' by publishing openly and in editable formats materials that are already routinely produced as part of teaching and learning, including course outlines, course information booklets or hand-outs, lecture notes, and formal course assessments (assignments, essay questions, tests, problems sets, and examinations). This can be helpful to current students as these materials become available in digital format. Having these resources available digitally removes the pressure to communicate the curriculum during contact time, and allows more time for discussion, problem-solving and learner engagement with the content. Taking the extra step to share these digital resources with future students, as well as other institutions is good advertising for your teaching. Over time, this practice could generate a rich repository of materials on which to draw, and will have provided students participating in the courses for which materials are being shared with a far richer experience of the content domain.

- Assess the design of courses and programmes to determine if there are additional ways to construct roles for students as active participants in these educational processes, who learn by doing and creating. As has been noted, content licences that encourage activity and creation by learners through re-use and adaptation of that content can make a significant contribution to creating more effective learning environments. In addition, through such activities, students can begin to make structured contributions to the pool of openly shared and accessible content.

- Promote more effective learning, especially for previously marginalized learners, by adapting learning resources to the diverse needs of students and facilitating discovery and use of a variety of learning approaches to a given learning goal. This can be achieved by making use of the diverse pool of resources available in OER repositories (see Appendix Two).

- Become familiar with national and institutional policies in regard to intellectual property rights and copyright on works created during the course of employment and how these might be shared with and used by others. This entails being clear about how these affect an

academic's rights and the ways open for channelling any concerns about the nature of these policies.

- Actively seek institutional support for professional development and collaborative partnerships that will result in the acquisition of requisite skills for more effective teaching and learning. Such skills could include materials design, curriculum development and the use of global repositories to identify appropriate resources (a detailed list of relevant skills is contained in Appendix One).

- Join existing networks and communities of practice online that are collaboratively developing, adapting, and sharing OER, as well as engaging in dialogue on their experiences in teaching and learning in higher education. Many such networks are have a clear disciplinary focus, so provide an excellent mechanism for teaching staff to keep up to date with developments in their field.

2.5 GUIDELINES FOR STUDENT BODIES

As the university has evolved over time, so too has the role of the student. The student is now widely accepted as a bearer of knowledge and experiences which play as significant a role in their own education as that played by the educator. Accordingly, the student's educational experience should encompass 'deeper learning'[7] – the so-called 21st century skills of critical thinking and problem solving; communication; collaboration; and creativity and innovation – that will enable them to be active members of society. These skills should be developed alongside mastery of core academic content and academic and other literacies. If this is to be true, then student engagement in and responsibility for their own education are attitudes that must be nurtured by their learning environment and actively sought by today's student.

Research[8] has found that university students generally share a positive attitude towards the use of ICT in teaching and learning. They are often adept at using technologies such as the Internet, computer programmes and audio-visual sources of information and have an expectation that these would form as much a part of their educational experience as more traditional forms of teaching and learning. There is also great potential for universities to capitalize on the talents of students to assist in sourcing, adapting, and producing OER in partnership with teaching staff, as well as supporting copyright clearance processes for existing content to enable its released under an open licence.

Students are routinely producers of knowledge and materials through the formal assessment tasks they are expected to complete. Many universities recognize this, and keep the work of top students available for view in their libraries. Seeing how another student responds to a question provides insight into what is expected for particular assignments and tasks, and can be an excellent source of inspiration and learning. In addition, many students already share work clandestinely, which be a contributing factor to student plagiarism in universities. By harnessing the work produced by the students themselves, and publishing it openly and publicly, it becomes easier to use automated tools to detect instances of plagiarism. This also provides

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[7] http://www.hewlett.org/programs/education-program/deeper-learning
[8] Survey report: Students' perceptions of the use of ICT in university learning and teaching. A project partially funded in the framework of the SOCRATES Programme – MINERVA Action of the Directorate General for Education and Culture of the European Commission. Source: http://www.spotplus.odl.org/downloads/Survey_report_final.pdf.

opportunities to encourage appropriate sharing amongst students. They can learn from each other in terms of approaches to writing an introduction and conclusion, or structuring a thesis, while referencing the work of other students.

Consequently, students and student bodies clearly have a role to play in determining the quality of their educational experience. Although the primary responsibility for creating teaching and learning environments that harness OER in educationally effective ways, it is wise for student bodies – as key stakeholders in higher education – to be aware of relevant issues and integrate them as appropriate into their interactions with other higher education stakeholders.

Within this context, it is suggested that student bodies:

- Be actively involved in and familiar with the state and institutional policies that govern their educational experience, in regard to access to regularly updated curricula and teaching materials and appropriate modes of curriculum development. To the greatest extent possible, student bodies should focus on influencing such policies to ensure that higher education providers design teaching and learning environments that see students as active participants in the learning process, not as passive recipients of content, as this will be key to the post-graduation value of higher education programmes. Such environments might, for example, include using high quality educational materials of different media where these are more appropriate than lecturing; harnessing existing and appropriate (openly-licensed) materials to update curriculum where this is more cost- and time-effective than designing new materials from scratch; and activities and assessment tasks that focus on engaging students in producing knowledge rather than passively receiving information from teaching staff.

- As part of the above process, lobby for sharing of publicly-funded educational materials under open licences to eliminate duplicated expenditure on purchasing copyrights that have already been paid for with public funds.

- Take active part in promoting quality provision by increasing awareness of students of the potential of OER to improve the educational experience. Such awareness-raising would be based on the educational and economic benefits of OER mapped out in this document. It could also form part of a broader process of student engagement with educational approaches at higher education institutions, focused on ensuring that students are seen as active participants who are able to engage actively in collaboration, group work, and production of knowledge as key components of their educational experience.

- Actively encourage students to publish their work routinely– in the form of responses to formal assessments – under an open licence, and engage with higher education providers to make this possible in order to enable students to become visible producers of knowledge while they are still studying. This work can then be used to build repositories of student examples of approaches to tasks, and can be a powerful learning tool. This also raises awareness about distinction between appropriate sharing / collaboration and plagiarism amongst students. Publishing student work can also put pressure on academics to ensure that their courses are refreshed annually, while making it more difficult for individual students to plagiarize particular assignments.

- Given the above and particularly in contexts where access to ICT and connectivity are scarce, engage actively in institutional decision-making processes in order to lobby for clear, funded plans to increase access to ICT and broadband connectivity for students, given the growing importance of this technical infrastructure in all higher education activities.

- Offer the services of students as interns who can assist in sourcing, adapting, and producing OER in partnership with teaching staff, as well as supporting copyright clearance processes for existing content to enable its released under an open licence.

2.6 GUIDELINES FOR QUALITY ASSURANCE AND ACCREDITATION BODIES AND ACADEMIC RECOGNITION BODIES

There are many agencies around the world that take responsibility for the external quality assurance (QA) of higher education, including accreditation of higher education institutions and/or their programmes. These bodies play an essential role in higher education, because they establish parameters of good practice and ensure that universities adhere to these practices. They also play a critical role in seeking to prevent poor quality educational practices from developing, as well as to protect students from exploitation by institutions. Given this, the understanding of what constitutes quality provision by quality assurance agencies and any quality criteria emanating from such an understanding at national level have a profound impact on the shape and nature of higher education practice in a particular country and across the world.

Serving a different but related purpose are academic recognition bodies which are responsible for assessing degrees for academic and professional mobility. In some countries these entities are done by one body, while, in other contexts, separate entities are established. The UNESCO regional conventions on recognition of qualifications are important instruments for facilitating the fair recognition of higher education qualifications. Furthermore, other groupings of countries, such as the Virtual University of Small States of the Commonwealth, have established the Transnational Qualification Framework in which qualifications can be recognized across participating countries, with each participating country invited to map its own national system with the transnational framework.

In light of the above, there are a few key issues for quality assurance and accreditation bodies and academic recognition bodies to consider in relation to OER

1) *How do quality assurance, accreditation, and recognition agencies tackle the IPR and copyright challenges posed by digitization of content and the variety of open licences available to help to deal with these challenges?*

   The rapid digitization of content and the accompanying growth of rights to use and/or adapt much of that content freely is having a significant effect on the way in which higher education institutions go about programme and course design, as well as the use that teaching staff make of learning resources in the course of their teaching. Moreover, the availability of full course material for independent or supported independent study

purposes is making possible new forms of educational provision and even new forms of institutions.[9]

These changes require quality assurance, accreditation, and academic recognition agencies to be aware of the developments that are taking place, to determine what the opportunities and challenges for quality might be and to develop the appropriate responses. As part of their role in helping to define quality for their higher education systems, such agencies may consider investing in engagements with government officials, institutional decision-makers, faculty, and other key stakeholders to explore the emerging issues and proactively consider both the possibilities and challenges that they pose. Particular attention should be paid to the new licences available under which a learning resource can be released and the importance of adhering to the conditions contained in that licence. It is important for higher education stakeholders to appreciate that OER licences can assist in ensuring that authors are properly attributed.

2) *What processes are currently in place to assure the quality of learning materials used in higher education? Do they take into account the wide range of types of learning materials and the different purposes and/or contexts in which they are used and are they also being applied to OER?*

In most countries, responsibility for the quality of any educational programme in higher education rests with the higher education institution[10]. The role of the external quality assurance and/or accreditation agency is to check, either directly (through programme accreditation) or indirectly (through the auditing of quality management systems) that the appropriate quality standards have been met. In relation to learning materials, teaching staff often see these as publications produced by publishers, which they hold as responsible for the quality. These Guidelines adopt the position that it is the higher education institution, through its teaching staff, which remains responsible for the selection and use of any learning material. This would obviously include any OER being used.

Given the role of quality assurance bodies mentioned above, they will sometimes consider the quality of learning materials directly in programme accreditation or indirectly through review of the quality management systems that an institution has in place to ensure that quality learning materials are used appropriately in their programmes. In conducting these quality assurance activities, it is essential that the agency is aware of the wide range of learning materials available (video clips, podcasts, images, diagrams, extracts from books, course material for independent learning, and so on) as well as the purpose for which, and the context in which, the learning materials are to be used. For this purpose, it may be useful to consider a continuum of the way in which learning materials will be used by students: from a highly mediated to predominantly independent use.

This continuum would then include learning materials used:
- In highly mediated predominantly face-to-face situations or predominantly synchronous online environments;
- In contexts where students spend much of their study time engaging independently or with peers with learning resources;

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[9] See, for example, the proposed OER University - http://wikieducator.org/OER_university/Home.
[10] In many countries, institutions are also given the right to accredit their own programmes.

- In supported independent study situations (i.e. what occurs in some distance education institutions through use of tutorial support systems);
- In study which is entirely independent (i.e. what occurs in some distance education institutions where only assessment – largely summative – is conducted and accreditation processed).

Quality requirements of the learning material change dramatically as one moves through these categories. Some countries have attempted to develop quality criteria which cover all of the above situations, and have been careful then to interpret these criteria for different purposes and contexts. Others have developed separate quality assurance process for predominantly face-to-face environments and for distance education.

There are many examples of criteria for quality learning materials, especially in distance education. Generally, these tend to cluster around issues such as:
- Being accessible to learners and appropriate for the learners' current abilities;
- Taking into account the learners' prior knowledge and context;
- Actively engaging the learner in the learning process;
- Containing content that is accurate, up-to-date, and free of prejudice;
- Contributing to the achievement of the learning outcomes.

If learning resources satisfy the relevant quality criteria interpreted for the different contexts, it should ultimately be irrelevant whether they were distributed under an open or proprietary licence.

3) *In which respects do current policies encourage or hinder the use of learning materials and OER in particular?*

Even though face-to-face lectures are becoming increasingly problematic from a quality assurance perspective as classes become larger, some criteria used, or assumptions made, in quality assurance systems privilege lectures as the most appropriate teaching method and hence place a premium on high levels of face-to-face interaction, regardless of the intensity or educational purpose of such interaction.[11]

Such quality assurance systems are often prejudiced against use of other learning methods, for example those where learners are expected to engage with learning resources, either independently or with their peers. Such systems do not encourage extensive use of learning resources, and therefore discourage use of OER. This establishes artificial constraints that prevent the full potential of OER from being realized.

If, however, use of learning resources is recognized as a central component of the learning environment, and the quality criteria referred to above are met, then this creates a productive space for institutions and teaching staff to harness educational resources of all kinds (without specific reference to whether or not they are openly licensed, but rather based on assessment of their quality and fitness for purpose).

Finally, given that course materials form only one component of the design of a course (with the others being learner support and assessment), it should make no difference whether an institution is using its own materials or those produced by another institution. As long as

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[11] In a lecture of 300 or more for example, it is clear that the interaction is at best superficial.

course materials meet the quality criteria for materials identified above and are well contextualized and properly integrated into the course design of the programme, then there should be no problem with re-use/adaptation of existing OER developed by other institutions.

4) *What quality assurance, accreditation, and academic recognition processes should be in place to safeguard quality but encourage constructive change through the adoption of OER?*

Quality assurance and academic recognition systems and processes for courses offered by institutions, whether face-to-face or online, should encompass teaching and learning materials. Such quality assurance systems and processes should include requirements for institutions to support courses with up-to-date and diverse materials that expose learners to multiple perspectives on issues. One possible way of encouraging the adoption of OER is to have quality criteria that state explicitly the possibility of including OER where necessary in course and materials design processes. A common problem experienced in many higher education institutions, however, is lack of resources for use by staff and students. This problem constrains not only the enrichment of learning activities, but also the development of high quality courses by teaching staff. If quality assurance and academic recognition systems of institutions explicitly encourage the use of rich and diverse learning materials in teaching and learning, the potential for teaching staff to make greater use of OER is increased*.*

Effective use of OER is premised on the ability of teaching staff to customize whatever resources are available in order to contextualize them for particular courses. Merely adopting what is freely available without necessary intellectual and pedagogical adaptation is unlikely to add much value to educational programmes in higher education institutions, neither does it effectively support continuing improvement of OER. To this end, quality assurance and academic recognition agencies can play an important role in encouraging appropriate adaptation of OER in order to ensure that they are fit for purpose. In addition, quality assurance bodies could encourage institutions to make available their best learning materials as a means to promote quality within the higher education system.

5) *How can a quality assurance or academic recognition agency most effectively pronounce on the quality of the material?*

Course design is an all-embracing process that includes conceptualization of what materials will support the course and the assessment systems that will be used. Thus, a quality assurance or academic recognition agency can only pronounce on the quality of materials within the context of a course. The appropriateness of learning materials is always judged in relation to the objectives of the course they are meant to support. Ideally, course review processes by quality assurance bodies should have as an important component, a review of the type of materials that will support the course. Academic recognition bodies can also take the same issues into account when assessing the value of learning that has taken place through courses using OER.

In light of these roles and noting the potential benefits of OER as outlined in this report, quality assurance, accreditation, and academic recognition agencies might wish to:

- Ensure that all personnel involved in quality assurance, accreditation, and academic recognition processes in higher education are familiar with the shifting terrain of IPR and copyright and understand the range of licensing options available for educational materials. Like all others stakeholders in higher education, these personnel will need to keep a watching brief on how the emergence of the Internet, mushrooming of access to freely available online content, ease of sharing digital content, and availability of different licences under which content can be shared create both opportunities and challenges for higher education.

- Engage in stakeholder-driven debates about the likely effect of these changes and how they might influence national quality assurance systems and qualifications frameworks in higher education. Although this may seem unnecessary, there is evidence in many countries that higher education systems and institutions are not yet grappling effectively with several of the changes being ushered in by the developments described in this paper. Quality assurance bodies, in particular, are ideally placed to facilitate discussion on these topics and begin proactive processes of analysing what effects they might have on higher education.

- Based on stakeholder-driven debates, analyse the extent to which current quality assurance, accreditation, and academic recognition processes facilitate or impede universities from taking advantage of the opportunities created by sharing and open licensing of content, as well as how effectively they provide protection from emerging threats and challenges to quality. The nature of these opportunities and challenges will vary, so there is no simple formula for policy reform, but there is an ongoing need to ensure that quality assurance systems at the national level are continually refined to deal with a changing context. Most importantly, they need to ensure that mechanisms for assuring quality that have become redundant due to these changes are proactively modified before they impede the emergence of alternative, innovative strategies for dealing with the many challenges that universities are tackling.

- Ensure that external quality assurance processes make provision for assessing and reviewing, either directly or indirectly, the role and use of educational resources in improving quality of teaching and learning. Here, it will be important to ensure that quality assurance systems and curriculum approval processes assess on their individual merits the use of resources sourced from multiple locations, as well as how these are integrated into curricula to form meaningfully coherent learning pathways. In particular, quality assurance agencies may wish to work with institutions to develop criteria for the assessment of educational resources and the purposes for which they are used in educational programmes, and to assist stakeholders to develop their abilities to conduct this assessment.

APPENDIX 1 – USEFUL SKILLS FOR EFFECTIVE USE OF OER IN HIGHER EDUCATION

Below is a list of the core skills that universities can usefully seek to develop in order to make most effective use of Open Educational Resources to improve the quality and cost-effectiveness of OER:

1) Expertise in advocacy and promotion of OER as a vehicle for improving the quality of learning and teaching in education (having a good grasp of both conceptual and practical issues, policy implications, and so on). This requires:

   a) Passion about the concept of openness, without which any attempts at advocacy are unlikely to succeed;

   b) Ability to engage audiences effectively during presentations;

   c) Understanding of the pros and cons of different open licensing arrangements, combined with insight into how most current policy environments constrain use of OER and open licensing of intellectual capital (with a particular focus on the challenges of persuading educational decision-makers in environments where Intellectual Property policies make no provision for open licensing);

   d) Clarity on the economic benefits of OER, both in terms of marketing institutions, programmes, and individuals and in cost-effectiveness of materials production;

   e) Sound knowledge of practical examples of use of OER to use to illustrate key points;

   f) Up-to-date knowledge of the arguments for and against use of OER.

   g) Capacity to engage in debate and respond to the many challenging questions that people will inevitably pose given the extent to which OER challenges many entrenched conceptual frameworks.

2) Legal expertise to be able to:

   a) Advise people on licensing of materials;

   b) Review current copyright and intellectual property rights (IPR) regimes;

   c) Develop and adapt privacy, copyright, and IPR policies;

   d) Determine requirements for copyright clearance and privacy to release materials under Creative Commons licences;

   e) Negotiate rights to use materials under Creative Commons licences;

   f) Reflect copyright and disclaimer statements accurately in materials of different kinds and multiple media.

3) Expertise in developing and explaining business models that justify, to institutions, individual educators, and other creators of educational content (including publishers), the use of open licensing and that illustrate the benefits.

4) Programme, course, and materials design and development expertise, with a particular focus on helping educators to harness the full potential of resource-based learning in their programmes and courses. This requires a thorough understanding of education (pedagogy; being able to differentiate between open, distance, electronic and blended learning – and

their respective merits, etc), as well as the context of education, tailored to the specific sector in which work is taking place. In addition, it requires skills in:

a) Conducting educational needs assessments;

b) Managing curriculum development processes;

c) Effective identification of target audiences;

d) Definition of effective and relevant learning outcomes;

e) Identification of relevant content areas for programmes, courses, and modules;

f) Selection of appropriate combinations of teaching and learning strategies to achieve identified learning outcomes;

g) Financial planning to ensure affordability and long-term sustainability of teaching and learning strategies selected;

h) Developing effective and engaging teaching and learning materials;

i) Integrating meaningful learner support into materials during design;

j) Designing appropriate effective assessment strategies;

k) Applying the most appropriate media and technologies to support learning outcomes;

l) Using media and technologies to support educational delivery, interaction, and learner support;

m) Sourcing OER, including a knowledge of the strengths and features of the main repositories, specialized repositories, and OER search engines;

n) Adapting and integrating OER coherently into contextualized programme and course curricula;

o) Negotiating with external individuals /organizations to issue or re-issue resources under open licences;

p) Re-versioning existing resources using optical character recognition where they do not exist in digital form;

q) Implementing the necessary processes for producing print-on-demand texts.

5) Technical expertise. This set of skills is tightly connected to the skills of materials design and development. Increasingly, resource-based learning strategies are harnessing a wide range of media and deployed in e-learning environments, facilitated by the ready availability of digitized, openly licensed educational content. This requires skills in:

a) Advising institutions on the pros and cons of establishing their own repositories, as well as advice on other possible ways of sharing their OER;

b) Creating stable, operational Virtual Learning Environments (VLEs) and content repositories;

c) Supporting educators to develop courses within already operational or newly deployed VLEs;

d) Developing computer-based multimedia materials (including video and audio materials).

6) Expertise in managing networks / consortia of people and institutions to work cooperatively on various teaching and learning improvement projects (including an ability to adapt to challenging environments – for example, power outages, physical discomfort, difficult personalities, institutional politics – and remain focused on the task at hand).

7) Monitoring and evaluation expertise to design and conduct formative evaluation processes, as well as longer-term summative evaluation and/or impact assessment activities that determine the extent to which use of open licensing has led to improvements in quality of teaching and learning, greater productivity, enhanced cost-effectiveness, and so on.

8) Expertise in curating and sharing OER effectively. This includes:

   a) Technical skills to develop and maintain web platforms to host OER online, as well as to share the content and meta-data with other web platforms;

   b) Ability to generate relevant and meaningful meta-data for OER;

   c) Knowledge of and the skills to deploy standardized global taxonomies for describing resources in different disciplines and domains;

   d) Website design and management skills to create online environments in which content can be easily discovered and downloaded.

9) Communication and research skills to be able to share information about OER, in the form of web updates, newsletters, brochures, case studies, research reports, and so on. This will include the full spectrum of skills required for such communication activities, from researching and documenting best practices, core concepts to graphic design and layout expertise.

APPENDIX 2 – PROMOTING MORE EFFECTIVE AND INCLUSIVE EDUCATION BY DESIGNING OER FOR THE DIVERSE NEEDS OF LEARNERS

Learners learn differently. Learning experiences that match the learner's individual learning needs result in the best learning outcomes. OER should be open and accessible to learners with a diversity of learning needs. Learning needs are affected by:

- Sensory, motor, cognitive, emotional, and social constraints;
- Learning styles or approaches;
- Linguistic and cultural backgrounds; and
- Technical, financial, and environmental constraints.

Accessible learning is achieved by matching the individual learning needs of each learner with a learning experience that addresses the needs. This can be accomplished by the resource delivery system by reconfiguring the resource where possible, by augmenting the resource, or by replacing the resource or parts of the resource with another resource or resource component that addresses the same learning goals.

To support this, learning materials or educational resources should:

1) Include labelling to indicate what learning needs the resource addresses;
2) Allow the creation of variations and enhancements through open licences;
3) Support flexible styling (for example, font can be enlarged, the colour contrast can be enhanced and the layout can be adjusted – for learners with vision impairments or mobile devices);
4) Support keyboard control of functions and navigation (for learners who cannot use or do not have access to a mouse or pointing device);
5) Provide audio or text descriptions of non-text information presented in videos, graphics or images (for learners who have visual constraints or who have limited displays);
6) Provide text captions of information presented in audio format (for learners who have hearing constraints or lack audio interfaces);
7) Cleanly separate text that can be read in the interface from underlying code or scripting (to enable translation);
8) Use open formats wherever possible to make it easier for alternative access systems and devices to display and control the resource.

The resource delivery system should also enable each learner, or their support team, to identify the learner's functional learning needs.

For more information on these issues, visit http://floeproject.org/.